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Identification of models of transfer processes in complex disperse systems

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Abstract

© 2016 Alexander K. Rozentsvaig and Cheslav S. Strashinskii.Specification of model representations of complex transfer processes in liquid emulsions based on mechanisms of the basic physical phenomena (MBPP) is considered in this paper. For the representation of the complex models of the transfer processes in a generalized form a correspondence of dimensionless similarity criteria and the most simple, basic physical phenomena are used. With a lack of complete mathematical models they are replaced by a set of such basic phenomena which express physical content of a complex process. Regressive relationships between the corresponding similarity criteria are evaluated on the basis of the experimental measurement data. As a result, a formal statistical analysis is filled with an objective physical content in accordance with the nature of the MBPP.

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Keywords

Basic physical phenomena, Droplets breakup, Fragmentation mode, Liquid emulsion, Transfer processes, Turbulent flow